

FEB 11 2004

Attorney Docket No. 201448-000341

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : BRAUN, Erez et al.
Serial No : 09/830,457 Examiner : LAM, Ann Y.
Filed : 10/27/1999 Art Unit : 1641
For : METHOD FOR GOLD DEPOSITION

CERTIFICATE OF MAILING (37 C.F.R. SECTION 1.8(a))

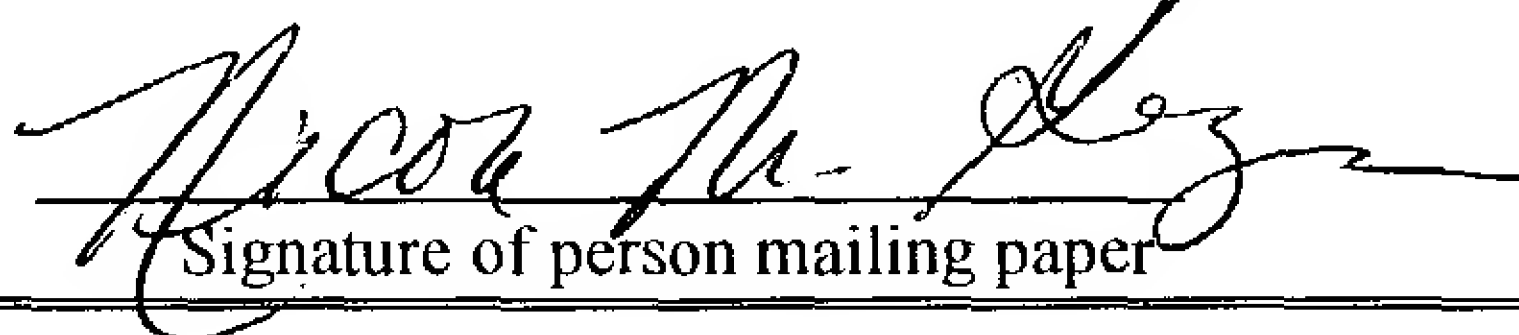
I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Date

2/9/2004

Nicole M. Gignac

(type or print name of person mailing paper)



Signature of person mailing paper

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

In accordance with the provisions of 37 C.F.R. §§1.56 and 1.97, Applicants herewith submit the publications and/or patents shown on the attached form(s) PTO/SB/08A and PTO/SB/08B, for consideration by the Examiner in connection with the examination of the above-identified patent application.

02/12/2004 JADD01 00000077 09830457

01 FC:1806

180.00 0P

Applicants : BRAUN, Erez et al.
Serial No : 09/830,457 Examiner : LAM, Ann Y.
Filed : 10/27/1999 Art Unit : 1641
For : METHOD FOR GOLD DEPOSITION

REMARKS

In accordance with the provisions of 37 C.F.R. §1.97, this statement is being filed:

- (1) within three (3) months of the Filing Date or **before the mailing date of the First Office Action** on the merits; or
- (2) within three months of the mailing date of the PCT International Search Report; or
- X (3) after the period defined in (1) but before the mailing date of a **Final Rejection** or **Notice of Allowance**, and the requisite Certification or fee under Rule 1.17(p), namely **\$180.00**, is included herein; or
- (4) after the mailing date of a **Final Rejection** or **Notice of Allowance** but before the payment of the **Issue Fee**, and the requisite Certification, petition, and petition fee are included herein.

It is respectfully requested that each of the documents shown on the attached form(s) PTO-1449 be made of record in this application. Copies of these documents (CHECK ONE):

- X are enclosed herewith; and
- have been cited in the parent application, and are thus not being resubmitted herein.
- A copy of the International Search Report in the corresponding PCT application is also enclosed herewith.

Early examination and allowance of the present application are respectfully solicited.

Applicants : BRAUN, Erez et al.
Serial No : 09/830,457 Examiner : LAM, Ann Y.
Filed : 10/27/1999 Art Unit : 1641
For : METHOD FOR GOLD DEPOSITION

FEE AUTHORIZATION

Should any fees associated with the submission be required, the Commissioner is authorized to charge the missing fee to our Deposit Account No. 50-0850. Any overpayments should be credited to said Deposit Account.

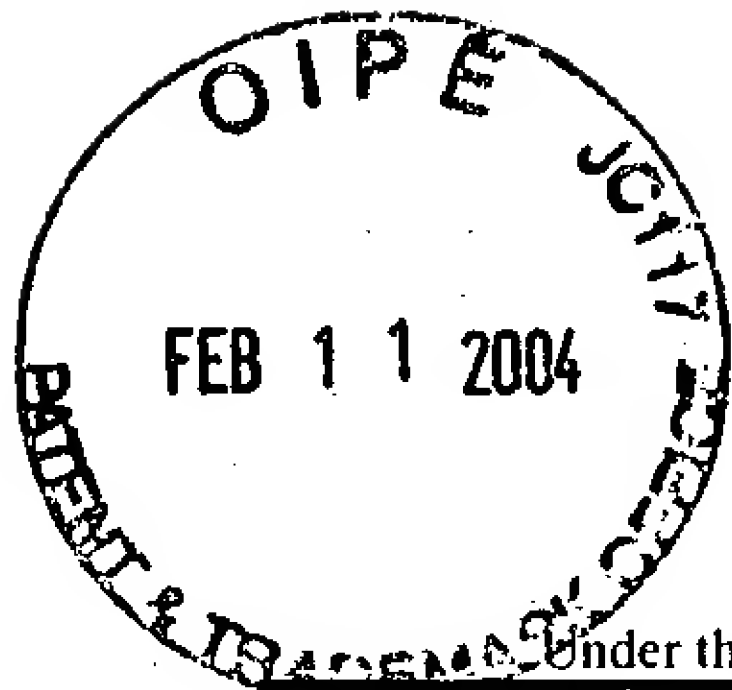
Date: 2/9/04

Customer No.: 26770

Respectfully submitted,



David S. Resnick (Reg. No. 34,235)
NIXON PEABODY LLP
101 Federal Street
Boston, MA 02110
(617) 345-6057



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

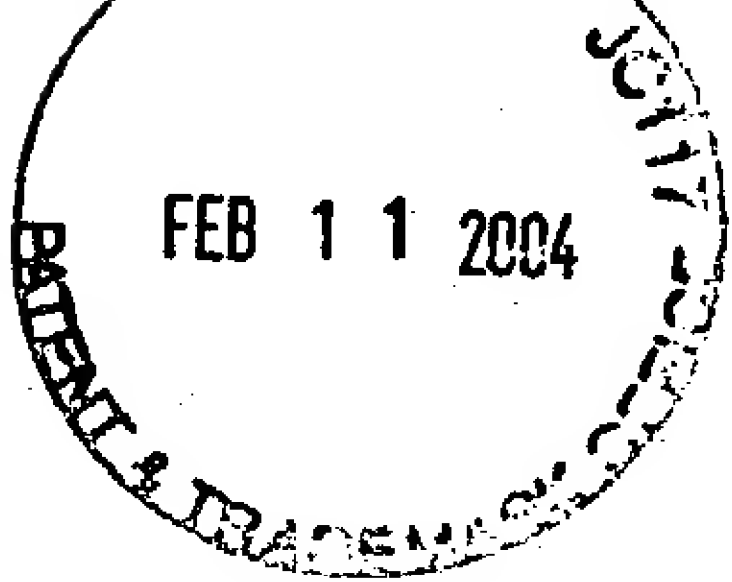
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	09/830,457	
			Filing Date	I.A. 10/27/1999	
			First Named Inventor	Erez Braun	
			Art Unit	1641	
			Examiner Name	Ann Y. Lam	
Sheet		of		Attorney Docket Number	201448-000341

U.S. PATENT DOCUMENTS					
Examiner Initials [*]	Cite No. ¹	U.S. Patent Document Number – Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

	1.	US-2002/0137070 A1	09/26/2002	Mirkin et al.	
	2.	US-2002/0137071 A1	09/26/2002	Mirkin et al.	
	3.	US-2002/0137072 A1	09/26/2002	Mirkin et al.	
	4.	US-2002/0146720 A1	10/10/2002	Mirkin et al.	
	5.	US-2002/0155462 A1	10/24/2002	Mirkin et al.	
	6.	US-2002/0160381 A1	10/31/2002	Mirkin et al.	
	7.	US-2002/0164605 A1	11/07/2002	Mirkin et al.	
	8.	US-2002/0182608 A1	12/05/2002	Connolly	
	9.	US-2003/0022169 A1	01/30/2003	Mirkin et al.	
	10.	US-2003/0059777 A1	03/27/2003	Mirkin et al.	
	11.	US-2003/0068622 A1	04/10/2003	Mirkin et al.	
	12.	US-2003/0087242 A1	05/08/2003	Mirkin et al.	
	13.	US-2003/0044805 A1	03/06/2003	Mirkin et al.	
	14.	US-2003/0049630 A1	03/13/2003	Mirkin et al.	
	15.	US-2003/0054358 A1	03/20/2003	Mirkin et al.	
	16.	US-2003/0180783 A1	09/25/2003	Mirkin et al.	
	17.	US-3,833,894	09/03/1974	Aviram et al.	
	18.	US-4,314,821	02/09/1982	Rice	
	19.	US-4,822,566	04/18/1989	Newman	
	20.	US-5,063,417	11/05/1991	Hopfield	
	21.	US-5,089,545	02/18/1992	Pol	
	22.	US-5,284,748	02/08/1994	Mroczkowski et al.	
	23.	US-5,312,527	05/17/1994	Mikkelsen et al.	
	24.	US-5,445,934	08/29/1995	Foder et al.	
	25.	US-5,561,071	10/01/1996	Hollenberg et al.	
	26.	US-5,563,424	10/08/1996	Yang et al.	
	27.	US-5,653,939	08/05/1997	Hollis et al.	
	28.	US-5,707,845	01/13/1998	Ueyama et al.	
	29.	US-5,739,308	04/14/1998	Kandimalla et al.	
	30.	US-5,770,369	06/23/1998	Meade et al.	
	31.	US-5,787,032	07/28/1998	Heller et al.	
	32.	US-5,787,332	07/28/1998	Black et al.	
	33.	US-5,824,473	10/20/1998	Meade et al.	
	34.	US-5,837,546	11/17/1998	Allen et al.	



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

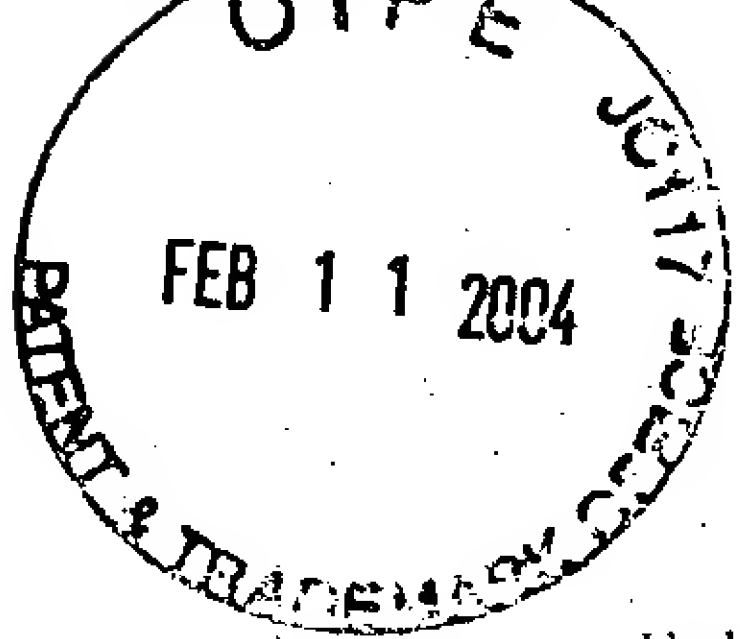
Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Complete if Known		
			Application Number	09/830,457	
			Filing Date	I.A. 10/27/1999	
			First Named Inventor	Erez Braun	
			Art Unit	1641	
			Examiner Name	Ann Y. Lam	
Sheet		of		Attorney Docket Number	201448-000341

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document Number – Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

	35.	US-5,858,659	01/12/1999	Sapolsky et al.	
	36.	US-5,874,046	02/23/1999	Megerle	
	37.	US-5,876,976	03/02/1999	Richards et al.	
	38.	US-5,891,630	04/06/1999	Eggers et al.	
	39.	US-5,914,505	06/22/1999	Hisada et al.	
	40.	US-5,946,550	08/31/1999	Papadimitrakopoulos	
	41.	US-6,051,380	04/18/2000	Sosnowski et al.	
	42.	US-6,060,023	05/09/023	Maracas	
	43.	US-6,071,699	06/06/2000	Meade et al.	
	44.	US-6,093,370	07/25/2000	Yasuda et al.	
	45.	US-6,210,880 B1	04/03/2001	Lyamichev et al.	
	46.	US-6,391,558 B1	05/21/2002	Henkens et al.	
	47.	US-6,399,303 B1	06/04/2002	Connolly	
	48.	US-6,645,721 B2	11/11/2003	Mirkin et al.	
Examiner Signature				Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

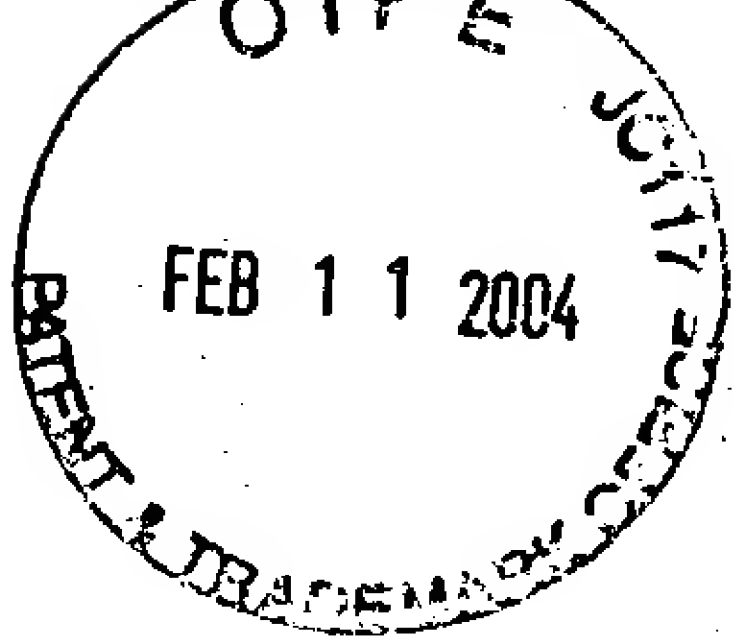
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known			
			Application Number		09/830,457	
			Filing Date		I.A. 10/27/1999	
			First Named Inventor		Erez Braun	
			Art Unit		1641	
			Examiner Name		Ann Y. Lam	
Sheet		of		Attorney Docket Number		201448-000341
U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	U.S. Patent Document Number – Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Kind Code ³ Country Code ³ Number ⁴ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	49.	EP 0 364 208 A1	04/18/1990	Thorne, Smith, Astill Technologies, Inc.		
	50.	EP 0 444 840 A1	09/04/1991	Ciba Corning Diagnostics Corp.		
	51.	JP 04/148669	05/1992			
	52.	WO 00/25136	05/04/2000	Technion Research and Development Foundation Ltd.		
	53.	WO 90/05300	05/17/1990	Midwest Research Technologies, Inc.		
	54.	WO 93/25003	12/09/1993	Yale University		
	55.	WO 94/05045	03/03/1994	The Regents of the University of California		
	56.	WO 97/44651	11/27/1997	Australian Membrane and Biotechnology Research Institute		
	57.	WO 98/31839	07/23/1998	President and Fellows of Harvard College		
	58.	WO 98/53841	12/03/1998	The State of Oregon acting by and through the State Board of Higher Education on behalf of the University of Oregon		
	59.	WO 99/04440	01/28/1999	Technion Research and Development Foundatoin Ltd.		
	60.	WO 99/29711	12/01/1998	Nanogen, Inc.		
	61.	WO 99/35256	07/15/1999	Institut Pasteur		
	62.	WO 99/36573	07/22/1999	Schichman et al.		
	63.	WO 99/57550	11/11/1999	Technion Research and Development Foundation Ltd.		
	64.	WO 99/60165	11/25/1999	Connolly		
Examiner Signature				Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

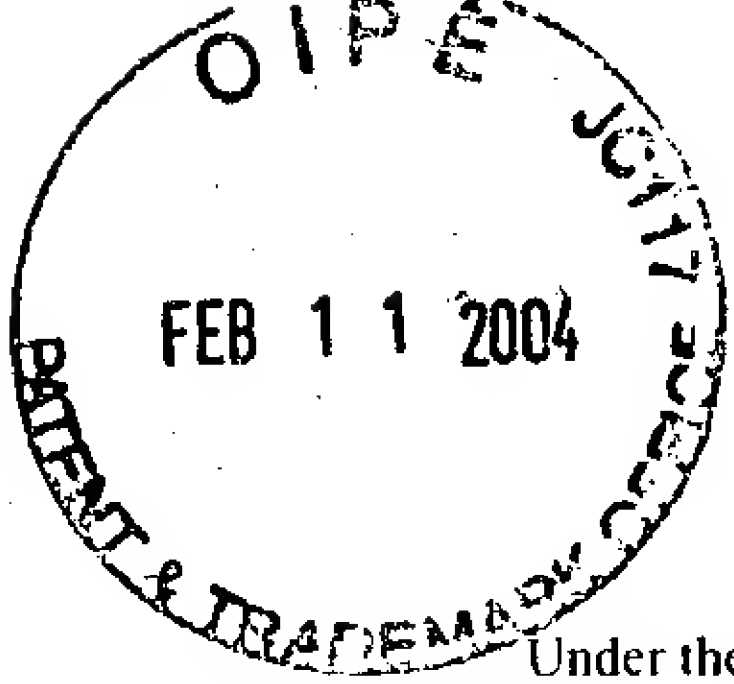
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	09/830,457	
			Filing Date	I.A. 10/27/1999	
			First Named Inventor	Erez Braun	
			Art Unit	1641	
			Examiner Name	Ann Y. Lam	
Sheet		of		Attorney Docket Number	201448-000341

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	65.	Ackley et al., "DNA Technology for Optoelectronics," <u>IEEE</u> , (1998)	
	66.	Alivisatos et al., "Organization of 'Nanocrystal Molecule' Using DNA," <u>Nature</u> , 382:609-611 (1996)	
	67.	Averin et al., in Altshuler, eds., "Single Electronics: A Correlated Transfer of Single Electrons and Cooper Pairs in Systems of Small Tunnel Junctions," <u>Mesoscopic Phenomena in Solids</u> , New York, New York: Elsevier Science Publishing Company, Inc., 173-271 (1991)	
	68.	Barton, "Metal/Nucleic-Acid Interactions," in Bertini, eds., <u>Bioinorganic Chemistry</u> , Sausalito, California: University Science Books, pp. 455-503 (1994)	
	69.	Bensimon et al., "Alignment and Sensitive Detection of DNA by a Moving Interface," <u>Science</u> , 265:2096-2098 (1994)	
	70.	Bensimon et al., "Stretching DNA with a Receding Meniscus: Experiments and Models," <u>Physical Review Letters</u> , 74(23):4754-4757 (1995)	
	71.	Bertini et al., "Bioinorganic Chemistry," <u>University Science Books</u> , 455-503 (1994)	
	72.	Birrell et al., "Silver Enhanced Colloidal Gold as a Cell Surface Marker for Photoelectron Microscopy," <u>Journal of Histochemistry and Cytochemistry</u> , 34(3):339-345 (1986)	
	73.	Braun et al., "DNA-Templated Assembly and Electrode Attachment of a Conducting Silver Wire," <u>Nature</u> , 391:775-778 (1998)	
	74.	Burroughes et al., "Light-Emitting Diodes Based on Conjugated Polymers," <u>Nature</u> , 347:539-541 (1990)	
	75.	Chen et al., "Synthesis from DNA of a Molecule with the Connectivity of a Cube," <u>Nature</u> , 350:631-633 (1991)	
	76.	Coffer et al., "Dictation of the Shape of Mesoscale Semiconductor Nanoparticle Assemblies by Plasmid DNA," <u>Appl. Phys. Lett.</u> , 69(25):3851-3853 (1996)	
Examiner Signature			Date Considered

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

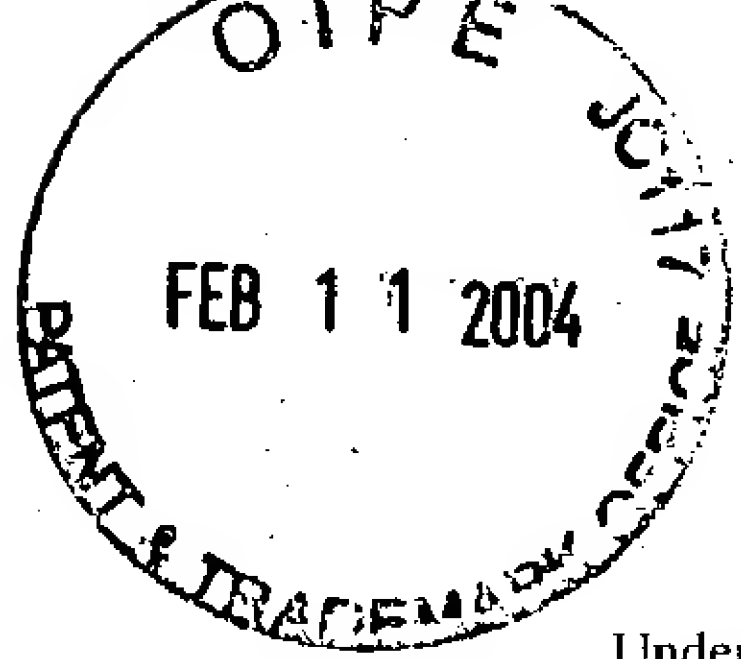
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	09/830,457		
		Filing Date	I.A. 10/27/1999		
		First Named Inventor	Erez Braun		
		Art Unit	1641		
		Examiner Name	Ann Y. Lam		
Sheet		of		Attorney Docket Number	201448-000341
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	77.	Danscher et al., "Light Microscopic Visualization of Colloidal Gold on Resin-Embedded Tissue," <u>Journal of Histochemistry and Cytochemistry</u> , 31(12):1394-1398 (1983)			
	78.	Danscher, "Localization of Gold in Biological Tissue. A Photochemical Method for Light and Electron Microscopy," <u>Histochem.</u> , 71:81-88 (1981)			
	79.	Demitras et al., "An Extension of the Role of O(2) of Cytosine Residues in the Binding of Metal Ions, Synthesis and Structure of an Unusual Polymeric Silver(I) Complex of 1-Methylcytosine," <u>J. Am. Chem. Soc.</u> , 99(8):2797-2798 (1977)			
	80.	Du et al., "Synthesis of a SNA Knot Containing Both Positive and Negative Nodes," <u>Journal of American Chemical Society</u> , 114(24):9652-9655 (1992)			
	81.	Eichhorn, "Complexes of Nucleosides and Nucleotides," in Eichhorn, ed., <u>Inorganic Biochemistry</u> , Vols. 1 and 2, New York, New York: American Elsevier Publishing Company, pp. 1191-1243 (1973)			
	82.	Fink et al., "Electrical Conduction Through DNA Molecules," <u>Nature</u> , 398:407-410 (1999)			
	83.	Goffeau, "Molecular Fish on Chips," <u>Nature</u> , 385:202-203 (1997)			
	84.	Grabar et al., "Kinetic Control of Interparticle Spacing in Au Colloid-Based Surfaces: Rational Nanometer-Scale Architecture," <u>J. Am. Chem. Soc.</u> , 118:1148-1153 (1996)			
	85.	Hall et al., "Oxidative DNA Damage Through Long-Range Electron Transfer," <u>Nature</u> , 382:731-735 (1996)			
	86.	Holgate et al., "Immunogold – Silver Staining," <u>Journal of Histochemistry and Cytochemistry</u> , 31(7):938-944 (1983)			
	87.	Kallenbach et al., "An Immobile Nucleic Acid Junction Constructed from Oligonucleotides," <u>Nature</u> , 305:829-831 (1983)			
	88.	Kastner et al., "The Single Electron Transistor," <u>Reviews of Modern Physics</u> , 64(3):849-858 (1992)			
	89.	Klein et al., "An Approach to Electrical Studies of Single Nanocrystals," <u>Appl. Phys. Lett.</u> , 68(18):2574-2576 (1996)			
	90.	Kouwenhoven et al., "Introduction to Mesoscopic Electron Transport," in Sohn, eds., <u>Mesoscopic Electron Transport</u> , The Netherlands: Kluwer Academic Publishers, pp. 1-44 (1997)			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

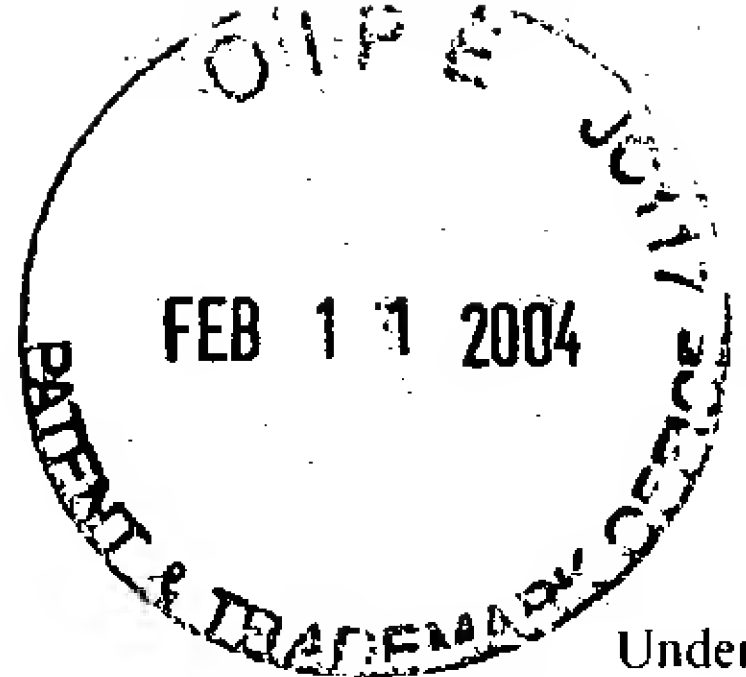
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	09/830,457		
		Filing Date	I.A. 10/27/1999		
		First Named Inventor	Erez Braun		
		Art Unit	1641		
		Examiner Name	Ann Y. Lam		
Sheet		of		Attorney Docket Number	201448-000341
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	91.	Langer et al., "Quantum Transport in a Multiwalled Carbon Nanotube," <u>Physical Review Letters</u> , 76(3):479-482 (1996)			
	92.	Meirav et al., "Single Electron Phenomena in Semiconductors," <u>Semiconductor Science Technology</u> 11:255-284 (1996)			
	93.	Mirkin et al., "A DNA-Based Method for Rationally Assembling Nanoparticles into Macroscopic Materials," <u>Nature</u> , 382:607-609 (1996)			
	94.	Mueller et al., "Design and Synthesis of a Knot From Single-Stranded DNA," <u>Journal of American Chemical Society</u> , 113(16):6306-6308 (1991)			
	95.	Porath et al., "Single Electron Tunneling and Level Spectroscopy of Isolated C ₆₀ Molecules," <u>J. Appl. Phys.</u> , 81(5):2241-2244 (1997)			
	96.	Roberts et al., "A New Procedure for the Detection of Gold on Animal Tissue," <u>Proceedings of the Section of Sciences</u> , N. V. Noord-Hollandsche Uitgeversmaatschappij, Amsterdam, 38:540-544 (1935)			
	97.	Sato et al., "Single Electron Transistor Using a Molecularly Linked Gold Colloidal Particle Chain," <u>J. Appl. Phys.</u> , 82(2):696-701 (1997)			
	98.	Scopsi et al., "Colloidal Gold Probes in Immunocytochemistry. An Optimization of Their Application in Light Microscopy by Use of Silver Intensification Procedures," <u>Med. Biol.</u> , 64:139-145 (1986)			
	99.	Scopsi et al., "Increased Sensitivity in Immunocytochemistry. Effects of Double Application of Antibodies and of Silver Intensification on Immunogold and Peroxidase-Antiperoxidase Staining Techniques," <u>Histochemistry</u> , 82:321-329 (1985)			
	100.	Seeman et al., "Synthetic DNA Knots and Catenanes," <u>New Journal of Chemistry</u> , 17(10):739-755			
	101.	Size, <u>Physics of Semiconductor Devices</u> , 2 nd Ed., 349:490-495 (date unknown)			
	102.	Springall et al., "The Potential of the Immunogold-Silver Staining Method for Paraffin Sections," <u>Histochemistry</u> , 81:603-608 (1984)			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

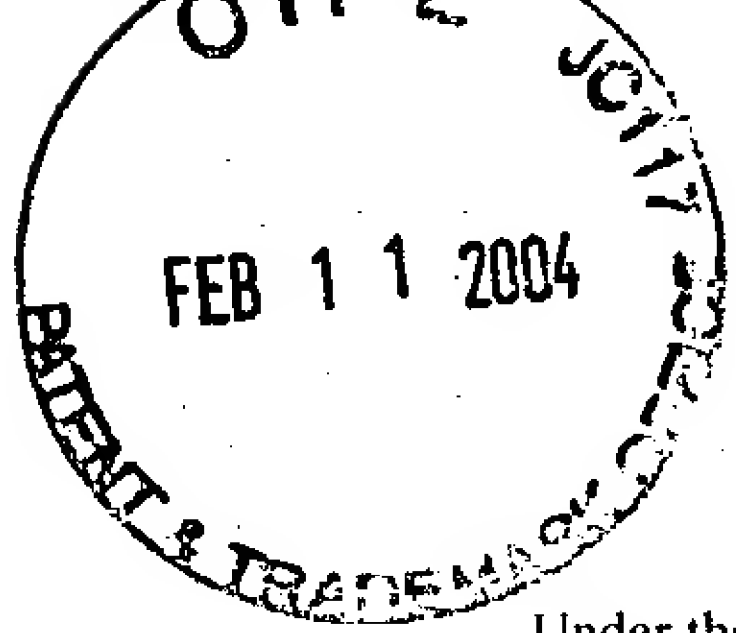
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	09/830,457
				Filing Date	I.A. 10/27/1999
				First Named Inventor	Erez Braun
				Art Unit	1641
				Examiner Name	Ann Y. Lam
Sheet		of		Attorney Docket Number	201448-000341
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	103.	Teasdale et al., "Identification of Oestrogen Receptors in Cells of Paraffin-Processed Breast Cancers by IGSS," <u>Histochemistry</u> , 87:185-187 (1987)			
	104.	Wirtz, "Direct Measurement of the Transport Properties of a Single DNA Molecule," <u>Physical Review Letters</u> , 75(12):2436-2439 (1995)			
	105.	Zimmermann et al., "DNA Stretching on Functionalized Gold Surfaces," <u>Nucleic Acids Research</u> , 22(3):492-497 (1994)			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

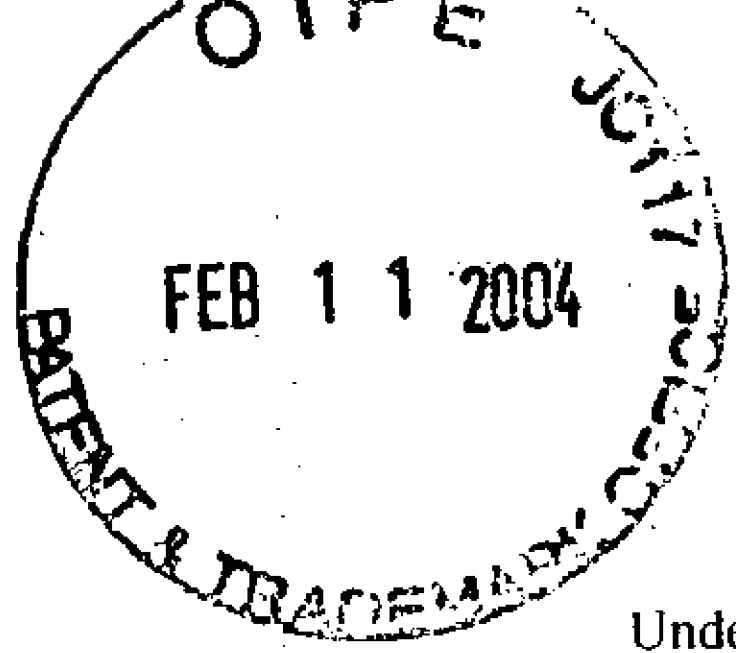
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	
				09/830,457	
				Filing Date	
				I.A. 10/27/1999	
				First Named Inventor	
Erez Braun					
Art Unit					
1641					
Examiner Name					
Ann Y. Lam					
Attorney Docket Number					
201448-000341					

Sheet		of	
-------	--	----	--

U.S. PATENT DOCUMENTS					
Examiner Initials ¹	Cite No. ¹	U.S. Patent Document Number – Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

	1.	US-2002/0137070 A1	09/26/2002	Mirkin et al.	
	2.	US-2002/0137071 A1	09/26/2002	Mirkin et al.	
	3.	US-2002/0137072 A1	09/26/2002	Mirkin et al.	
	4.	US-2002/0146720 A1	10/10/2002	Mirkin et al.	
	5.	US-2002/0155462 A1	10/24/2002	Mirkin et al.	
	6.	US-2002/0160381 A1	10/31/2002	Mirkin et al.	
	7.	US-2002/0164605 A1	11/07/2002	Mirkin et al.	
	8.	US-2002/0182608 A1	12/05/2002	Connolly	
	9.	US-2003/0022169 A1	01/30/2003	Mirkin et al.	
	10.	US-2003/0059777 A1	03/27/2003	Mirkin et al.	
	11.	US-2003/0068622 A1	04/10/2003	Mirkin et al.	
	12.	US-2003/0087242 A1	05/08/2003	Mirkin et al.	
	13.	US-2003/0044805 A1	03/06/2003	Mirkin et al.	
	14.	US-2003/0049630 A1	03/13/2003	Mirkin et al.	
	15.	US-2003/0054358 A1	03/20/2003	Mirkin et al.	
	16.	US-2003/0180783 A1	09/25/2003	Mirkin et al.	
	17.	US-3,833,894	09/03/1974	Aviram et al.	
	18.	US-4,314,821	02/09/1982	Rice	
	19.	US-4,822,566	04/18/1989	Newman	
	20.	US-5,063,417	11/05/1991	Hopfield	
	21.	US-5,089,545	02/18/1992	Pol	
	22.	US-5,284,748	02/08/1994	Mroczkowski et al.	
	23.	US-5,312,527	05/17/1994	Mikkelsen et al.	
	24.	US-5,445,934	08/29/1995	Foder et al.	
	25.	US-5,561,071	10/01/1996	Hollenberg et al.	
	26.	US-5,563,424	10/08/1996	Yang et al.	
	27.	US-5,653,939	08/05/1997	Hollis et al.	
	28.	US-5,707,845	01/13/1998	Ueyama et al.	
	29.	US-5,739,308	04/14/1998	Kandimalla et al.	
	30.	US-5,770,369	06/23/1998	Meade et al.	
	31.	US-5,787,032	07/28/1998	Heller et al.	
	32.	US-5,787,332	07/28/1998	Black et al.	
	33.	US-5,824,473	10/20/1998	Meade et al.	
	34.	US-5,837,546	11/17/1998	Allen et al.	



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

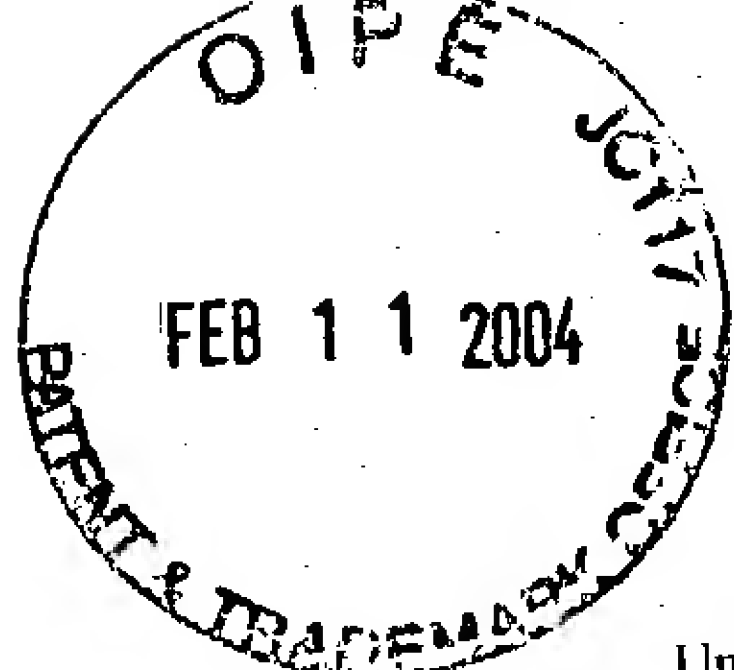
Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Complete if Known		
			Application Number	09/830,457	
			Filing Date	I.A. 10/27/1999	
			First Named Inventor	Erez Braun	
			Art Unit	1641	
			Examiner Name	Ann Y. Lam	
Sheet		of		Attorney Docket Number	201448-000341

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No. ¹	U.S. Patent Document Number – Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

	35.	US-5,858,659	01/12/1999	Sapolsky et al.	
	36.	US-5,874,046	02/23/1999	Megerle	
	37.	US-5,876,976	03/02/1999	Richards et al.	
	38.	US-5,891,630	04/06/1999	Eggers et al.	
	39.	US-5,914,505	06/22/1999	Hisada et al.	
	40.	US-5,946,550	08/31/1999	Papadimitrakopoulos	
	41.	US-6,051,380	04/18/2000	Sosnowski et al.	
	42.	US-6,060,023	05/09/2000	Maracas	
	43.	US-6,071,699	06/06/2000	Meade et al.	
	44.	US-6,093,370	07/25/2000	Yasuda et al.	
	45.	US-6,210,880 B1	04/03/2001	Lyamichev et al.	
	46.	US-6,391,558 B1	05/21/2002	Henkens et al.	
	47.	US-6,399,303 B1	06/04/2002	Connolly	
	48.	US-6,645,721 B2	11/11/2003	Mirkin et al.	
Examiner Signature				Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

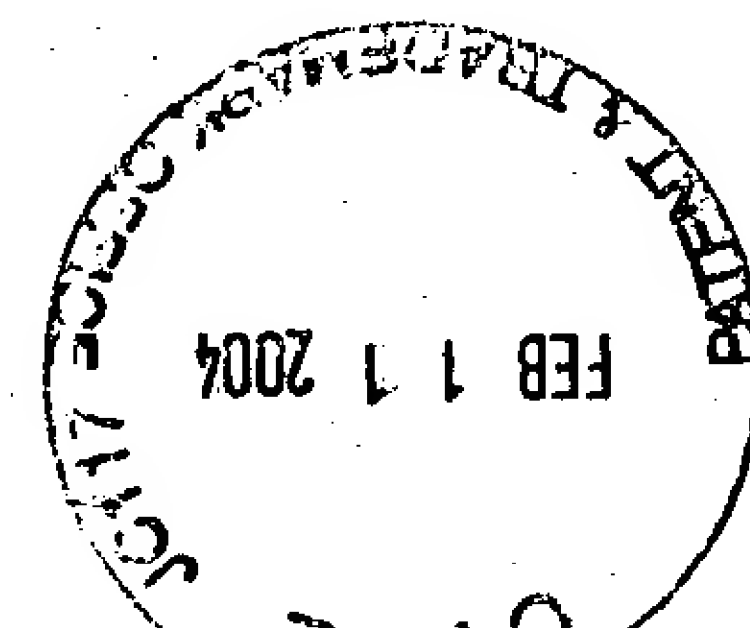
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

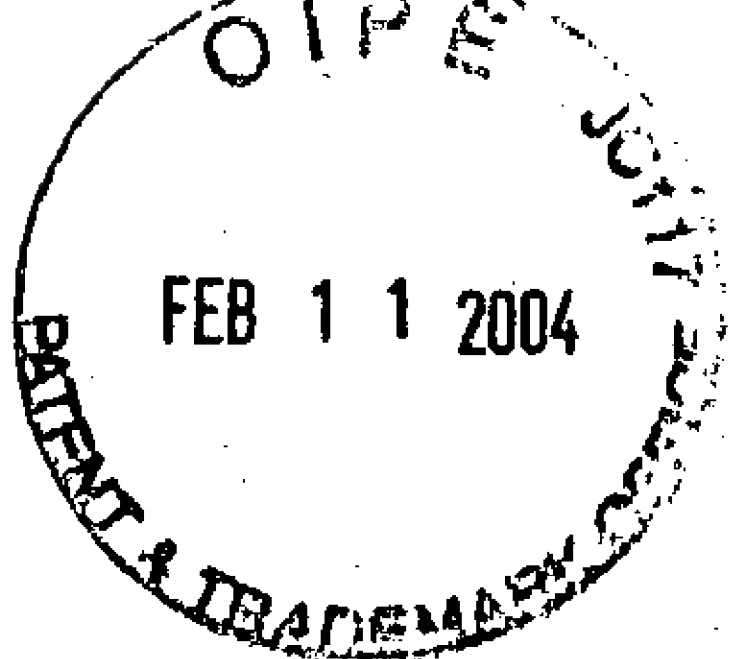
Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known			
				Application Number		09/830,457	
				Filing Date		I.A. 10/27/1999	
				First Named Inventor		Erez Braun	
				Art Unit		1641	
				Examiner Name		Ann Y. Lam	
Sheet		of		Attorney Docket Number		201448-000341	
U.S. PATENT DOCUMENTS							
Examiner Initials [*]	Cite No. ¹	U.S. Patent Document Number – Kind Code ² (if known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS							
Examiner Initials [*]	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ (if known)	Kind Code ³ (if known)				
	49.	EP 0 364 208 A1		04/18/1990	Thorne, Smith, Astill Technologies, Inc.		
	50.	EP 0 444 840 A1		09/04/1991	Ciba Corning Diagnostics Corp.		
	51.	JP 04/148669		05/21/1992	Abstract – 04148669 A		
	52.	WO 00/25136		05/04/2000	Technion Research and Development Foundation Ltd.		
	53.	WO 90/05300		05/17/1990	Midwest Research Technologies, Inc.		
	54.	WO 93/25003		12/09/1993	Yale University		
	55.	WO 94/05045		03/03/1994	The Regents of the University of California		
	56.	WO 97/44651		11/27/1997	Australian Membrane and Biotechnology Research Institute		
	57.	WO 98/31839		07/23/1998	President and Fellows of Harvard College		
	58.	WO 98/53841		12/03/1998	The State of Oregon acting by and through the State Board of Higher Education on behalf of the University of Oregon		
	59.	WO 99/04440		01/28/1999	Technion Research and Development Foundatoin Ltd.		
	60.	WO 99/29711		06/17/1999	Nanogen, Inc.		
	61.	WO 99/35256		07/15/1999	Institut Pasteur		
	62.	WO 99/36573		07/22/1999	Schichman et al.		
	63.	WO 99/57550		11/11/1999	Technion Research and Development Foundation Ltd.		
	64.	WO 99/60165		11/25/1999	Connolly		
Examiner Signature					Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.





PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

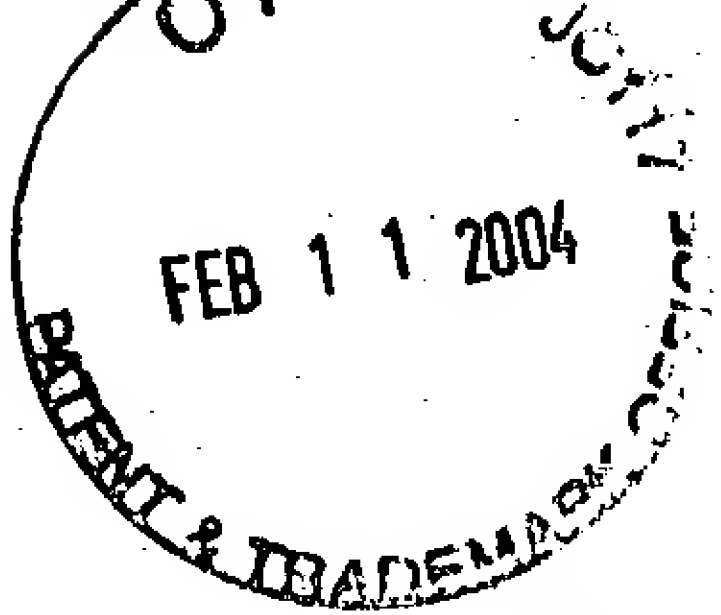
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Complete if Known		
			Application Number	09/830,457	
			Filing Date	I.A. 10/27/1999	
			First Named Inventor	Erez Braun	
			Art Unit	1641	
			Examiner Name	Ann Y. Lam	
Sheet		of		Attorney Docket Number	201448-000341

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	65.	Ackley et al., "DNA Technology for Optoelectronics," <u>IEEE</u> , (1998)	
	66.	Alivisatos et al., "Organization of 'Nanocrystal Molecules' Using DNA," <u>Nature</u> , 382:609-611 (1996)	
	67.	Averin et al., in Altshuler, eds., "Single Electronics: A Correlated Transfer of Single Electrons and Cooper Pairs in Systems of Small Tunnel Junctions," <u>Mesoscopic Phenomena in Solids</u> , New York, New York: Elsevier Science Publishing Company, Inc., 173-271 (1991)	
	68.	Barton, "Metal/Nucleic-Acid Interactions," in Bertini, eds., <u>Bioinorganic Chemistry</u> , Sausalito, California: University Science Books, pp. 455-503 (1994)	
	69.	Bensimon et al., "Alignment and Sensitive Detection of DNA by a Moving Interface," <u>Science</u> , 265:2096-2098 (1994)	
	70.	Bensimon et al., "Stretching DNA with a Receding Meniscus: Experiments and Models," <u>Physical Review Letters</u> , 74(23):4754-4757 (1995)	
	71.	Bertini et al., "Bioinorganic Chemistry," <u>University Science Books</u> , 455-503 (1994)	
	72.	Birrell et al., "Silver Enhanced Colloidal Gold as a Cell Surface Marker for Photoelectron Microscopy," <u>Journal of Histochemistry and Cytochemistry</u> , 34(3):339-345 (1986)	
	73.	Braun et al., "DNA-Templated Assembly and Electrode Attachment of a Conducting Silver Wire," <u>Nature</u> , 391:775-778 (1998)	
	74.	Burroughes et al., "Light-Emitting Diodes Based on Conjugated Polymers," <u>Nature</u> , 347:539-541 (1990)	
	75.	Chen et al., "Synthesis from DNA of a Molecule with the Connectivity of a Cube," <u>Nature</u> , 350:631-633 (1991)	
	76.	Coffer et al., "Dictation of the Shape of Mesoscale Semiconductor Nanoparticle Assemblies by Plasmid DNA," <u>Appl. Phys. Lett.</u> , 69(25):3851-3853 (1996)	
Examiner Signature			Date Considered

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

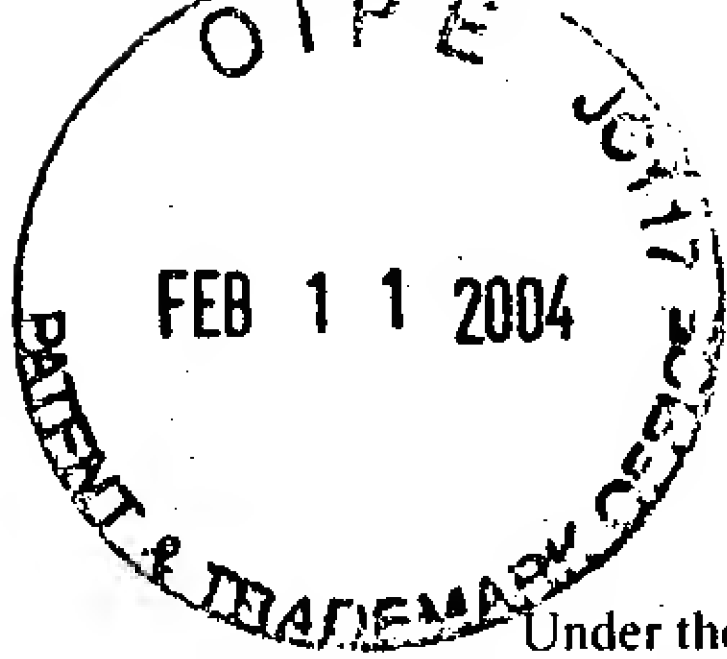
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	09/830,457	
			Filing Date	I.A. 10/27/1999	
			First Named Inventor	Erez Braun	
			Art Unit	1641	
			Examiner Name	Ann Y. Lam	
Sheet		of		Attorney Docket Number	201448-000341
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	77.	Danscher et al., "Light Microscopic Visualization of Colloidal Gold on Resin-Embedded Tissue," <u>Journal of Histochemistry and Cytochemistry</u> , 31(12):1394-1398 (1983)			
	78.	Danscher, "Localization of Gold in Biological Tissue. A Photochemical Method for Light and Electron Microscopy," <u>Histochem.</u> , 71:81-88 (1981)			
	79.	Demitras et al., "An Extension of the Role of O(2) of Cytosine Residues in the Binding of Metal Ions, Synthesis and Structure of an Unusual Polymeric Silver(I) Complex of 1-Methylcytosine," <u>J. Am. Chem. Soc.</u> , 99(8):2797-2798 (1977)			
	80.	Du et al., "Synthesis of a SNA Knot Containing Both Positive and Negative Nodes," <u>Journal of American Chemical Society</u> , 114(24):9652-9655 (1992)			
	81.	Eichhorn, "Complexes of Nucleosides and Nucleotides," in Eichhorn, ed., <u>Inorganic Biochemistry</u> , Vols. 1 and 2, New York, New York: American Elsevier Publishing Company, pp. 1191-1243 (1973)			
	82.	Fink et al., "Electrical Conduction Through DNA Molecules," <u>Nature</u> , 398:407-410 (1999)			
	83.	Goffeau, "Molecular Fish on Chips," <u>Nature</u> , 385:202-203 (1997)			
	84.	Grabar et al., "Kinetic Control of Interparticle Spacing in Au Colloid-Based Surfaces: Rational Nanometer-Scale Architecture," <u>J. Am. Chem. Soc.</u> , 118:1148-1153 (1996)			
	85.	Hall et al., "Oxidative DNA Damage Through Long-Range Electron Transfer," <u>Nature</u> , 382:731-735 (1996)			
	86.	Holgate et al., "Immunogold – Silver Staining," <u>Journal of Histochemistry and Cytochemistry</u> , 31(7):938-944 (1983)			
	87.	Kallenbach et al., "An Immobile Nucleic Acid Junction Constructed from Oligonucleotides," <u>Nature</u> , 305:829-831 (1983)			
	88.	Kastner et al., "The Single Electron Transistor," <u>Reviews of Modern Physics</u> , 64(3):849-858 (1992)			
	89.	Klein et al., "An Approach to Electrical Studies of Single Nanocrystals," <u>Appl. Phys. Lett.</u> , 68(18):2574-2576 (1996)			
	90.	Kouwenhoven et al., "Introduction to Mesoscopic Electron Transport," in Sohn, eds., <u>Mesoscopic Electron Transport</u> , The Netherlands: Kluwer Academic Publishers, pp. 1-44 (1997)			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

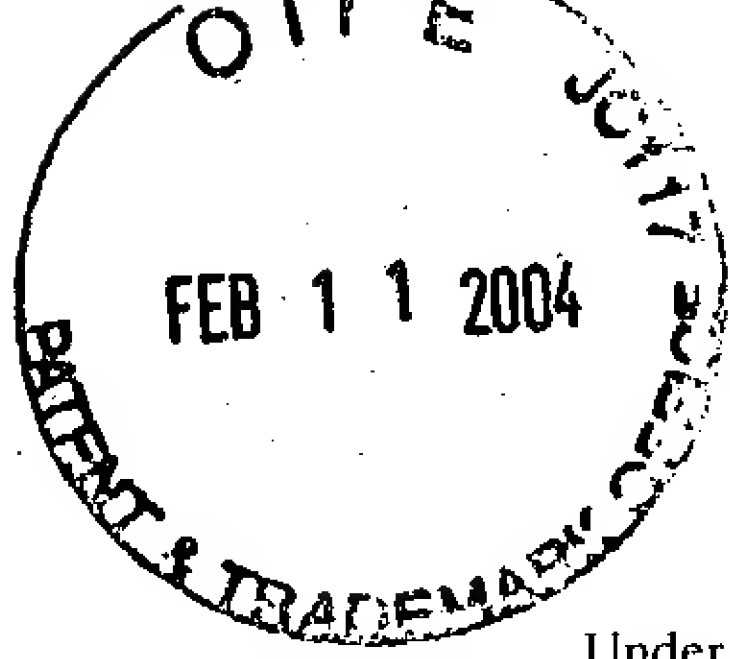
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Application Number	09/830,457	
			Filing Date	I.A. 10/27/1999	
			First Named Inventor	Erez Braun	
			Art Unit	1641	
			Examiner Name	Ann Y. Lam	
Sheet		of		Attorney Docket Number	201448-000341
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	91.	Langer et al., "Quantum Transport in a Multiwalled Carbon Nanotube," <u>Physical Review Letters</u> , 76(3):479-482 (1996)			
	92.	Meirav et al., "Single Electron Phenomena in Semiconductors," <u>Semiconductor Science Technology</u> 11:255-284 (1996)			
	93.	Mirkin et al., "A DNA-Based Method for Rationally Assembling Nanoparticles into Macroscopic Materials," <u>Nature</u> , 382:607-609 (1996)			
	94.	Mueller et al., "Design and Synthesis of a Knot From Single-Stranded DNA," <u>Journal of American Chemical Society</u> , 113(16):6306-6308 (1991)			
	95.	Porath et al., "Single Electron Tunneling and Level Spectroscopy of Isolated C ₆₀ Molecules," <u>J. Appl. Phys.</u> , 81(5):2241-2244 (1997)			
	96.	Roberts et al., "A New Procedure for the Detection of Gold on Animal Tissue," <u>Proceedings of the Section of Sciences</u> , N. V. Noord-Hollandsche Uitgeversmaatschappij, Amsterdam, 38:540-544 (1935)			
	97.	Sato et al., "Single Electron Transistor Using a Molecularly Linked Gold Colloidal Particle Chain," <u>J. Appl. Phys.</u> , 82(2):696-701 (1997)			
	98.	Scopsi et al., "Colloidal Gold Probes in Immunocytochemistry. An Optimization of Their Application in Light Microscopy by Use of Silver Intensification Procedures," <u>Med. Biol.</u> , 64:139-145 (1986)			
	99.	Scopsi et al., "Increased Sensitivity in Immunocytochemistry. Effects of Double Application of Antibodies and of Silver Intensification on Immunogold and Peroxidase-Antiperoxidase Staining Techniques," <u>Histochemistry</u> , 82:321-329 (1985)			
	100.	Seeman et al., "Synthetic DNA Knots and Catenanes," <u>New Journal of Chemistry</u> , 17(10):739-755; 1993.			
	101.	Size, <u>Physics of Semiconductor Devices</u> , 2 nd Ed., 349:490-495 (date unknown)			
	102.	Springall et al., "The Potential of the Immunogold-Silver Staining Method for Paraffin Sections," <u>Histochemistry</u> , 81:603-608 (1984)			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	09/830,457
				Filing Date	I.A. 10/27/1999
				First Named Inventor	Erez Braun
				Art Unit	1641
				Examiner Name	Ann Y. Lam
Sheet		of		Attorney Docket Number	201448-000341
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T ²
	103.	Teasdale et al., "Identification of Oestrogen Receptors in Cells of Paraffin-Processed Breast Cancers by IGSS," <u>Histochemistry</u> , 87:185-187 (1987)			
	104.	Wirtz, "Direct Measurement of the Transport Properties of a Single DNA Molecule," <u>Physical Review Letters</u> , 75(12):2436-2439 (1995)			
	105.	Zimmermann et al., "DNA Stretching on Functionalized Gold Surfaces," <u>Nucleic Acids Research</u> , 22(3):492-497 (1994)			
Examiner Signature				Date Considered	

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.